WHAT IS CLAIMED IS:

1.   A computer system for storing, archiving, querying and retrieving information relating to three-dimensional objects; the system comprising:

data acquisition means for acquiring point coordinate data about the three-dimensional object;

a database component;

a processor operable to:

generate modeled data from the point coordinate data;

segment the modeled data into feature data representing a plurality of features of the object;

store the modeled data and the feature data in the database component; and

retrieve modeled data and feature data from the database using search criteria comprising representing an object feature; and

a user interface operative with the processor to:

input to the processor search criteria; and

display data retrieved by the processor as a representation of an object feature.

2.   The system of claim 1 wherein the point coordinate data is surface data.

3..   The system of claim 1 wherein the point coordinate data is volume data.

4.   The system of claim 1 wherein the feature data represents a point.

5.   The system of claim 1 wherein the feature data represents a curve.

6.   The system of claim 1 wherein the feature data represents a facet on a surface.

7.   The system of claim 1 wherein the processor is further operable to compress the modeled data.

8.   The system of claim 7 wherein the modeled data comprises a triangle mesh and the processor is operable to compress the modeled data using B-spline curves.

9.   The system of claim 7 wherein the modeled data comprises a triangle mesh and the processor is operable to segment the modeled data using subdivision surface compression.

10.   The system of claim 1 wherein the point coordinate data comprises a triangle mesh and the processor is operable to segment the modeled data using watershed segmentation method including improved curvature estimation.

11.   The system of claim 1 wherein the point coordinate data comprises a triangle mesh and the processor is operable to segment the modeled data using a hybrid segmentation method.

12.   The system of claim 1 wherein the point coordinate data comprises a triangle mesh and the processor is operable to segment the modeled data using watershed segmentation.

13.   The system of claim 1 wherein the point coordinate data comprises volume data the processor is operable to segment the modeled data using Weibull E-SD fields.

14.   The system of claim 1 wherein the point coordinate data comprises volume data and the processor is operable to segment the modeled data using Greedy connected component labeling refinement.

15.   The system of claim 1 wherein the user interface includes a graphic user interface that operates with the processor to allow a sketch-based search of the database.

16.   A method for storing, archiving, querying and retrieving information relating to 3D objects; the system comprising:

      acquiring point coordinate data from a physical object;

      generating modeled data from the point coordinate data;

      segmenting the modeled data into feature data representing a plurality of features of the physical object;

      storing the modeled data and the feature data in a database; and

      organizing the modeled data and the feature data so that features of the physical object can be automatically extracted for online query and retrieval of the plurality of features of the physical object.

17.   The method of claim 16 wherein the point coordinate data is surface data.

18.   The method of claim 16 wherein the point coordinate data is volume data.

19.   The method of claim 16 further comprising compressing the modeled data.

20.   The method of claim 19 wherein the modeled data comprises a triangle mesh and compressing the modeled data is performed using B-spline curves.

21.   The method of claim 19 wherein the modeled data comprises a triangle mesh and compressing the modeled data is performed using a subdivision surface compression method.

22.   The method of claim 16 wherein the point coordinate data comprises a triangle mesh and segmenting the modeled data is performed using watershed segmentation.

23.   The method of claim 16 wherein the point coordinate data comprises a triangle mesh and segmenting the modeled data is performed using a hybrid segmentation method.

24.   The method of claim 16 wherein the point coordinate data comprises volume data and segmenting the modeled data is performed using Weibull E-SD fields.

25.   The method of claim 16 wherein the point coordinate data comprises volume data and segmenting the modeled data is performed using Greedy connected component labeling refinement.